KanguruClone *4 HD & 12 HD*
USER'S GUIDE

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This manual applies to 4.6.05 or later versions of the KanguruClone *HD*

Please be aware of the following points before using the KanguruClone *HD*

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CUSTOMER SERVICE

To obtain service or technical support for your system, please contact Kanguru Solutions Technical Support Department at 508-376-4245, or visit www.Kanguru.com for web support.

LIMITED WARRANTY

Kanguru Solutions guarantees that every KanguruClone HD will be free from defects in workmanship and materials for 1 year from the date of purchase. This product carries a *1 year limited warranty on the power supply, controller, and all internal components. The warranty does not cover any IDE, SATA, or Power cables. This warranty does not apply if, in the judgment of Kanguru Solutions, the product fails due to damage from handling, accident, abuse, misuse, or if it has been used in a manner not conforming to the product's instructions, has been modified in anyway, or the warranty labels have been removed. If the product proves defective during this warranty period, call Kanguru Solutions Technical Support in order to obtain a RMA required for service. When returning a product, mark the RMA number clearly on the outside of the package, and include a copy of your original proof of purchase.

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CHAPTER 1 Introduction

Welcome

Congratulations on your purchase of the *KanguruClone HD* from Kanguru Solutions. The *KanguruClone HD* is a high speed, stand-alone UDMA IDE hard drive duplicator that can simultaneously clone up to 4 or 12 hard drives. The duplicator has many advanced features for the IT professional, yet a novice can begin cloning hard drives within minutes of taking it out of the box. Just attach your master drive and target drives and then press the Copy button to begin the cloning process.

The *KanguruClone HD* copies the content of a master hard disk to up to four or twelve drives simultaneously. With ultra fast copy speeds averaging 2GB/min, the KanguruClone HD is one of the fastest cloning systems available.

KanguruClone HD Package Contents:

- 1 – *KanguruClone HD* unit with internal power supply.
- 1 – AC power cable.
- 10 – 3.5” IDE ribbon cables. (4HDD unit Only)
- 10 – 8cm HDD power cables. (4HDD unit Only)
- 25 – 3.5” IDE ribbon cables. (12HDD unit Only)
- 25 – 8cm HDD power cables. (12HDD unit Only)
- Manual & User registration

If any of the above items are missing, please call Kanguru Solutions’ Tech Support department at: (508) 376-4245, extension 2 and replacement parts will be shipped to you ASAP.

Features:

- **Data Transfer Rate:** 2GB/min Average
- **Simultaneously clone up to 4 hard drives**
- **HDD Size and Brand independent:** Master & target drives can be different sizes, brands, and model.
- **One-year Standard Warranty:** This system comes complete with a one-year parts and 90 day labor warranty.
- **Clones any file system:** including DOS, Win98, Win2K, Win NT, Win XP, Linux, and many more.

- **10 Copy Functions:**

Disk Copy	Full copy, sector for sector
Brief Copy	Copies only sectors with data
Resize Copy	Copies HDDs with different capacities
Area Copy	Copies a defined Area of the Master HDD
Ratio Copy	Copies a defined Percentage of the Master HDD
Disk Compare	Compares Master HDD to Target HDD for accuracy
Brief Compare	Compares only sectors with data
Resize Compare	Compares HDDs with different capacities
Area Compare	Compares a defined Area of the Master HDD
Ratio Compare	Compares a defined Percentage of the Master HDD

- **Agency Approvals:** UL 1950, FCC Part 15 Class A, CE

- **Diagnostic tools:**
  Scan target drive for bad sectors
  DOD (7x) File Wipe
  Repair Damaged sectors

- **Advanced Features:** Supports ATA-6 standards of 48-bit addressing to support drives greater than 137GBs.

Specifications:

Dimensions 4HD:	9” W x 17.5” D x 4” H
Dimensions 12HD:	27” W x 17.5” D x 4” H
Operating Temperature:	5° ~ 55° C
Relative Humidity:	20% ~ 60%
Weight:	5.6 Kgs, 12.4lbs
Power Supply:	250W, 4P Power (5V and 12V)
Input Device:	4 Push Buttons

CHAPTER 2 Getting to Know Your KanguruClone *HD*

Hardware Setup

1. Before plugging in the AC Power Cable, please make sure that the voltage is adjusted to the same as your local voltage 110V/220V.

2. The unit is designed to hold the Master drive in the bay located on the left side of the unit. Before connecting the Master drive, make sure that the jumpers are set to either ***MASTER*** or ***CABLE SELECT***. You may now connect the Master drive.

3. There are four/twelve corresponding IDE ribbon cables and power connectors for each of the attached Target drives. Before connecting the Target drives, make sure that the jumpers are set to either ***MASTER*** or ***CABLE SELECT***. You may now connect the Target drive(s).

4. Note that the drives are not powered until you actually start a copy operation.

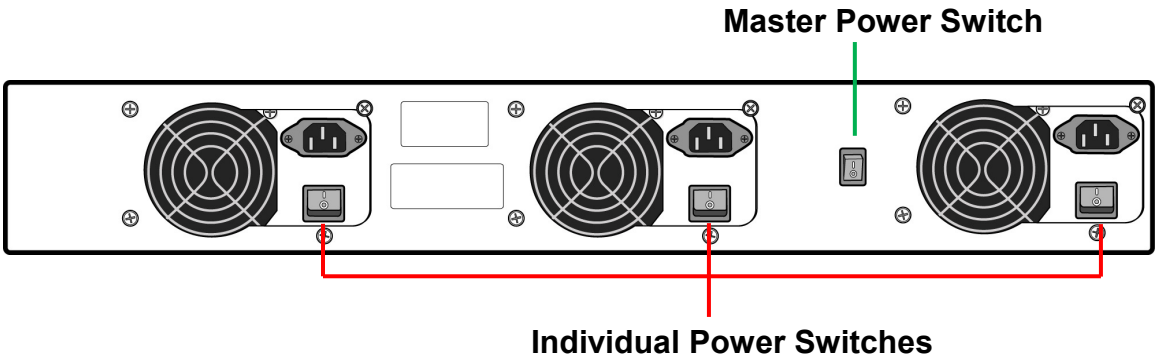
5. **Note:** The supplied cables are **NOT** standard IDE cables like the ones found in a PC. Do not attempt to use these cables in a PC nor to use PC cables with the KanguruClone *HD*.

6. You are now ready to begin using your KanguruClone *HD.* To begin, turn on the unit with the power switch located on the back panel, select the desired copy function, and press select.

Things to remember:

- The KanguruClone *HD* is powered by an internal power supply that is controlled by a rocker switch located at the rear of the unit.

- The KanguruClone 12HD is essentially three KanguruClone 4HD units in one. Each one of these three units has its own individual power switch. While operating, make sure that all three individual power switches are in the on position. Operating the unit with an individual power switch in the off position can cause configuration problems. You should leave all three individual power switches in the on position and use the master power switch to turn the entire unit on or off.



- The KanguruClone *HD* supplies power to all drives during a cloning session. There is no need to connect an external power source to the drives. The unit can supply up to 1.5A at 12V and up to 1A at 5V to each drive.

- It is OK to connect and disconnect Master or Target drives while the KanguruClone *HD* is powered on. However, do NOT connect or disconnect drives during a cloning session. The yellow status light will turn on to indicate that the unit is cloning.

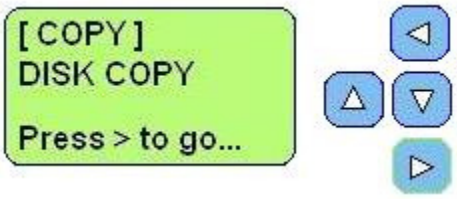
The User Interface

Kanguru Solutions designed the user interface (UI) with the professional in mind. The UI is fast, responsive, and to the point. What this means is that very few key presses are needed to achieve a desired action, and fewer “Are you sure?” messages flash on the screen.

The UI is controlled by 4 push buttons located to the right of the LCD screen.

There are three tiers to the KanguruClone HD’s user interface.

MAIN MENU



- Press the left arrow to enter the Set Up Menu.
- Press the up and down arrows to navigate modes (COPY, DIAGNOSTIC, and TOOL).
- Press the right arrow to start the selected mode.

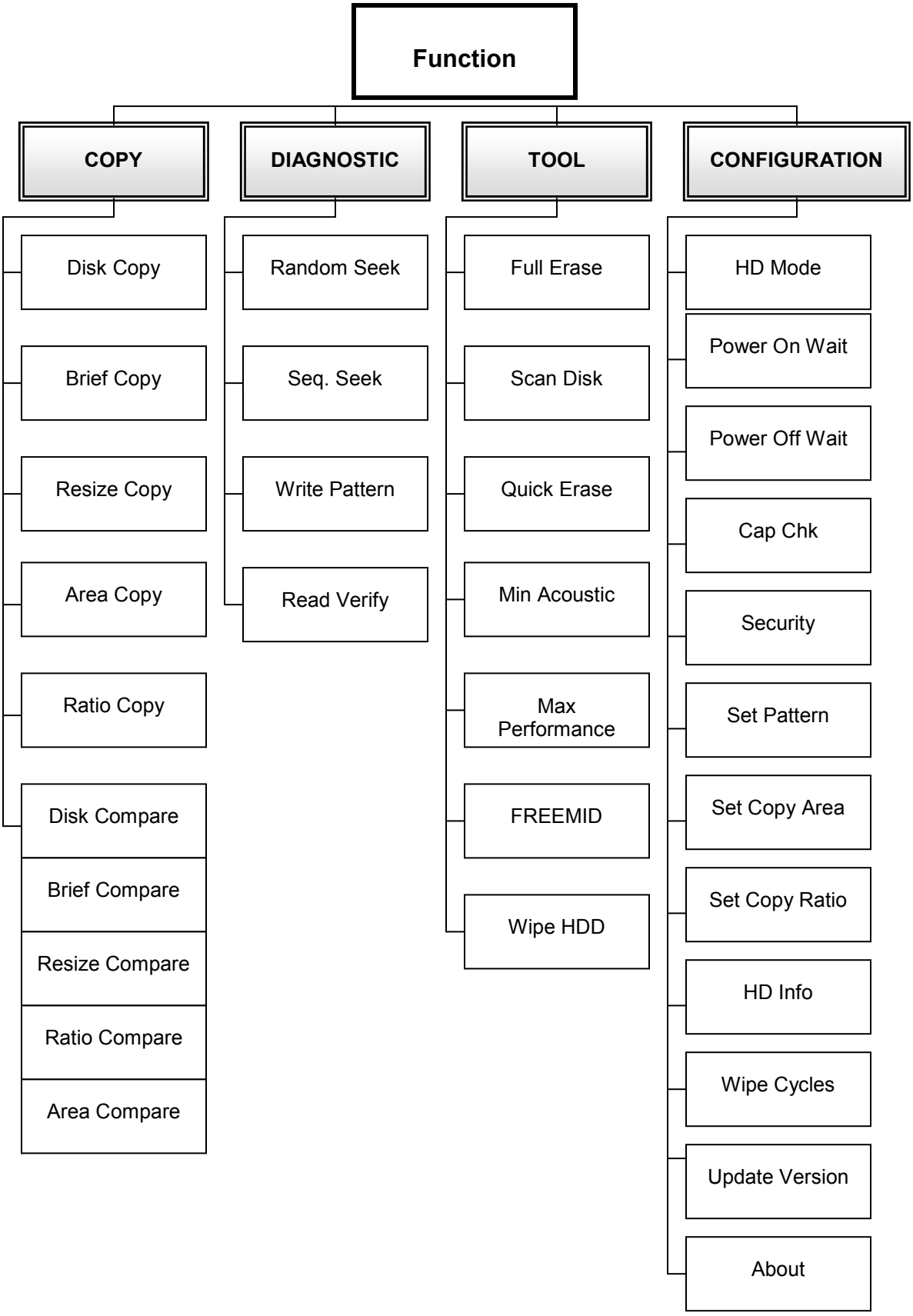
SETUP MENU

- Press the left arrow to enter the Setup Menu.
- Press the up and down arrows to navigate modes
- Press the right arrow to enter the function menu for that particular mode.

FUNCTION MENU

- Press the left arrow to go back to the Setup Menu.
- Press the up and down arrows to navigate functions
- Press the right arrow to select the function. **[x]**

Function Diagram



CHAPTER 3 Cloning

Using your Kanguru*Clone HD*

The *KanguruClone HD* can clone hard drives in one of three modes:

- **Disk Copy** – this mode clones hard drives sector by sector from the Master to the Target(s), and supports all data formats. This mode is the slowest of the three, but the safest. **Disk Copy is the default mode.**

- **Brief Copy** – this mode clones only the sectors with information and will skip the blank sectors (including information hidden in sub channels). This mode is the fastest but will only support the following formats: FAT, FAT16, FAT32, NTFS, HFS, EXT1, EXT2, EXT3,. ***Kanguru Solutions strongly recommends using Master and Target drives of the same capacity.**

- **Resize Copy** – this mode is used to clone Master and Target drives with different capacities. This mode only copies the sectors with information and skips the blank sectors. This mode is faster than Disk Copy, but slower than Brief copy because it needs a little time to calculate the capacity difference between the Master and Target drives. ***You can only use two different capacities of Master and Target drives. E.g. a Master of 60GB and Target drives of 20GB.**

- **Area Copy** – this mode allows you to copy a defined area of the Master hard drive. You must define the beginning and ending sectors before using this function.

- **Ratio Copy** - this mode allows you to copy a defined percentage of the Master hard drive. You must define the beginning and ending percentages before using this function.

To begin cloning:

1. Connect the Master and Target drives (all drives must be jumpered to Master or Cable select)

2. Power on the Kanguru*Clone HD.*

3. By default the Kanguru*Clone HD* is set to Copy (Disk Copy). If this is the desired operation, press the right arrow to begin.

4. If you want to clone using one of the other cloning modes, press the left arrow to enter the Setup Menu. Make sure the > arrow is next to Copy by using the

up and down arrows, and then press the right arrow to enter the Function menu. You can now select the desired Copy mode (Disk Copy, Brief Copy, or Resize Copy), and use the right arrow to confirm **[x]**. Press the left arrow two times to return to the main menu. You can now press the right arrow to begin cloning.

5. Once the Kanguru*Clone HD* has finished cloning, it will display a **"V"** for passed Target drives, and an **"X"** for failed Target drives.

Verifying Cloned Hard Drives

*****The *KanguruClone HD* can verify cloned hard drives in one of three modes:

- **Disk Compare** – this mode compares drives sector by sector to assure that all of the Target drives have the same information as the Master drive.

- **Brief Compare** – this mode only compares the sectors with information and skips the blank sectors to assure that all of the Target drives have the same information as the Master drive.

- **Resize Compare** – this mode only compares hard drives with different capacities, comparing only the sectors with information and skipping any blank sectors. It also calculates if the location of the information on the Target drive(s) correspond to the Master drive.

***The Compare functions can only be used when the UDMA transfer mode is disabled. To Disable the UDMA mode, go the Configuration menu and change UDMA Auto to disable.**

To begin comparing:

1. Leave the all drives in place after a cloning session has completed.

2. The Compare functions are located under the Copy Mode. By default none of the Compare functions are enabled, so you will have to enter the Setup Menu to select the desired function. Follow Step 3 to do so.

3. Press the left arrow to enter the Setup Menu. Make sure the > arrow is next to Copy by using the up and down arrows, and then press the right arrow to enter the Function menu. You can now select the desired Compare mode (Disk Compare, Brief Compare, or Resize Compare), and use the right arrow to confirm **[x]**. Press the left arrow two times to return to the main menu. You can now press the right arrow to begin comparing.

4. Once the Kanguru*Clone HD* has finished cloning, it will display a **"V"** for passed Target drives, and an **"X"** for failed Target drives.

***Please note that the Compare functions can be used in conjunction with the Copy functions, to achieve an all in one Copy and Compare setting. To do so, simply select a Copy function and a Compare function at the same time.**

CHAPTER 4 Advanced Features

Diagnostic

The KanguruClone HD includes several diagnostic modes to run reports on a drives physical status. The following modes are used to verify if a drive can be used with the KanguruClone HD:

- **Random Seek** – randomly reads sectors to see if there are bad sectors in the hard drive.
- **Seq. Seek** – checks the hard drives in a specific pattern to check if there are any bad sectors in the hard drives.
- **Write Pattern** – checks if there are any sectors that cannot be written to. You can define the pattern in the Configuration mode.
- **Read Verify** – reads all sectors to check if there are any sectors that cannot be read.

To run a diagnostic function:

1. Attach the hard drive(s) that you would like to run the diagnostic tests on.
2. Press the left arrow to enter the Setup Menu. Make sure the > arrow is next to Diagnostic by using the up and down arrows, and then press the right arrow to enter the Function menu. You can now select the desired Diagnostic mode (Random Seek, Seq. Seek, Write Zero, or Read Verify), and use the right arrow to confirm **[x]**. Press the left arrow two times to return to the main menu. You can now press the right arrow to begin.
4. Once the Kanguru*Clone HD* has finished the diagnostics, it will display a **"V"** for passed Target drives, and an **"X"** for failed Target drives.

Tool

The KanguruClone HD includes several modes to completely erase drives. The following modes are used to wipe a drive clean:

- **Full Erase** – deletes all information, wiping the drive clean.
- **Quick Erase** – quickly delete the information in the reboot sector of the drive.

- **Scan Disk** – quickly check for any bad sectors on the hard disk.

- **Min Acoustic** – this will slow down the spindle speed of the hard drives to reduce the rotation rate.

- **Max Performance** - this will set the spindle speed to the highest setting of the hard drives to increase the rotation rate.

- **Wipe HDD** – this function is used to completely erase a hard drive. This is a 4 step process to ensure a full erase.

    1. Fill the entire drive with 0's.
    2. Fill the entire drive with 1's.
    3. Fill the entire drive with a random pattern (0's and 1's)
    4. Verify entire drive.

To erase a hard drive:

1. Attach the hard drive(s) that you would like to erase.

2. Press the left arrow to enter the Setup Menu. Make sure the > arrow is next to Tool by using the up and down arrows, and then press the right arrow to enter the Function menu. You can now select the desired Tool mode (Full Erase, Quick Erase, or Scan Disk), and use the right arrow to confirm **[x]**. Press the left arrow two times to return to the main menu. You can now press the right arrow to begin.

4. Once the Kanguru*Clone HD* has finished erasing the disks, it will display a **"V"** for passed Target drives, and an **"X"** for failed Target drives.

***The difference between the full erase and quick erase is that Full Erase will completely erase the Hard Disk and at the same time verify if there are any bad sectors, while Quick Erase only deletes the rebooting sector.**

Configuration

- **HD Mode**
    - **Auto** – The Kanguru*Clone HD* will automatically choose the CHS (Cylinder Head Sector) translation. This is the default setting.
    - **LBA** – Translates the physical number of heads to 255. This is the most common translation method used by most PC BIOS.
    - **Large** – Translates the physical number of heads to 128 or 240. Use this translation method if the Target Drive fails to boot using the LBA translation method.

  - **Normal** – Enables normal CHS Translation.

- **Power On Wait** – Increases the Kanguru*Clone's* booting time. The default is 0 seconds.

- **Power Off Wait** - Increases the Kanguru*Clone's* shutdown time. The default is 0 seconds.

- **Cap. Chk**
  - **Enable:** Checks if the Master hard drive and the Target(s) have the same capacity. If they have different capacities, then the Kanguru*Clone* will not start the cloning process. The LCD screen will display "CAP" in the upper right corner of the Main Menu if this setting is enabled.
  - **Disable:** Master and Target capacities are not compared, and the cloning process will begin normally.

- **Security**
  - **Enable** – the machine will not operate until password is provided
  - **Disable** – fully operational without any password

- **Set Pattern** – This is used to define the Pattern you want to write to the destination drives.

- **Set Copy Areas** - This is used to define the beginning and ending of the Area you want to copy.

- **Set Copy Ratio** - This is used to define the beginning and ending of the percentage of the drive you want to copy.

- **HD Info** – Shows the information about the source hard drive.

- **Load Default** - This function will reset all features to the default set-up, making the unit operate the same as when you first opened it.

- **Wipe Cycles** – This allows you to set the number of times you want the HDD Wipe function to run. You can set it to run up to 9 consecutive times.

- **Update Version** – The function is used to upgrade the unit's firmware. DO NOT use the function, unless a Kanguru Solutions technician has instructed you to do so.

- **About** – Displays firmware information.

CHAPTER **5** F.A.Qs

FAQs

Q1. Do all Target drives have to be the same capacity? Same Brand?
A1. If you select “DISK COPY” or “BRIEF COPY “, the target hard disks must have the same capacity as source hard disk. The hard disk brand is not important but capacity must be identical.

Q2. Can I clone a smaller capacity Source drive to larger capacity Target?
A2. Yes, use the “RESIZE COPY“ function to clone a smaller capacity Source to larger capacity Targets. However, targets must all be the same size. i.e. you can clone a 20GB Master to 4, 100GB Targets using RESIZE COPY.

Q3. Can I clone to Targets of various brands simultaneously?
A3. Yes, the machine is able to clone hard disks of different brands.

Q4. Can drives with different RPM speeds be cloned together?
A4. Yes, the machine will adjust to hard disks with different RPMs.

Q5. Do the Diagnostic features check the Source HDD or the Targets?
A5. The Diagnostic features will check the Target hard drives.

Q6. How does the duplicator handle multiple partitions on the Master drive?
A6. The machine will auto-detect how many partitions in the source hard disk and then copy it, but you are unable to select a partition to copy.

Q7. How does the duplicator handle multiple partitions of varying formats on the Master drive?
A7. The machine will analyze the File System of the Master hard disk before it begins cloning.

Q8. Can the duplicator clone file systems such s UNIX and OS/2?
A8. Yes, use the “DISK COPY” function to copy any file system.

Q9. Can the duplicator de-frag a partition?
No, this must be done directly by the operating system of your PC.

Q10. What purpose does increasing the boot time with the “Power On Wait” function server?
A10. The increased boot time feature is useful when using old hard disks. Older hard disks may need more time to initiate the disk before cloning.

Warranty

*This product carries a *1 year limited warranty on the power supply, controller, and all internal components. The warranty does not cover any IDE, SATA, or Power cables. Kanguru Solutions is not responsible for any damages incurred in the shipping process. Any claims for loss or damage must be made to carrier directly. Claims for shipping errors should be reported to Kanguru Solutions within three (3) working days of receipt of merchandise. Please refer to the RMA Procedure section of this manual if your duplicator needs servicing.*

In no event shall Kanguru Solutions' liability exceed the price paid for the product from direct, indirect, special, incidental, or consequential software, or its documentation. Kanguru Solutions offers no refunds for its products. Kanguru Solutions makes no warranty or representation, expressed, implied, or statutory, with respect to its products or the contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose. Kanguru Solutions reserves the right to revise or update its products, software, or documentation without obligation to notify any individual or entity.

**90-day warranty on labor. After 90 days, a $20.00 service charge will be applied to all RMAs. Shipping back to the customer is covered during the first 90 days of purchase. After 90 days the customer is responsible for shipping both ways.*

RMA Procedure

All Duplicators being serviced must be packed in the ORIGINAL PACKAGING. **If you do not have your original packaging, you can purchase replacement packaging for $25.00 from Kanguru's Tech Support Department. Kanguru Solution's warranty will not be honored in the event that a duplicator is received improperly packaged, altered, or physically damaged.**

STEP ONE: Call for a RMA Number: 508-376-4245

Duplicators will not be accepted for repair without a valid RMA number. RMA numbers are valid for 30 days upon assignment. Any return without a valid RMA number will be returned to the customer at their expense.

STEP TWO: Ship and Insure your Duplicator

Kanguru Solutions strongly recommends you fully insure the duplicator for shipping. Kanguru Solutions is not responsible for if the package is lost or damaged in transit. We suggest using a shipping company that utilizes a "tracking" feature to verify "proof of delivery." The customer is responsible for shipping charges when returning a product. Shipping back to the customer is covered by Kanguru Solutions during the first 90 days of purchase. **After 90 days of purchase the customer is responsible for shipping both ways.**

Clip and Use this Label to Ship Your Return

Tech Support

If you experience any problems using your KanguruClone HD or have any technical questions regarding any of our products, please call our tech support department. Our tech support is free and available Monday thru Friday, 9am to 5pm EST.

Call 1-508-376-4245 or
Visit our website at www.KanguruSolutions.com

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